

*REMARKS/ARGUMENTS**The Present Invention and the Pending Claims*

Claims 1 and 3-27 are currently pending and are directed to a photosensitive resin composition (claims 1, 3-12, 26, and 27), a photosensitive resin composition layer (claim 13), and a photosensitive resin printing original plate (claims 14-25).

Summary of the Claim Amendments

The elements of claim 2 have been added to claim 1, and claim 2 has been canceled accordingly. Claim 1 also has been amended to recite that each of the two or more hydrophobic polymers is present in a fine particle state in the uncured composition, as supported by the specification. Claim 6 has been amended to recite that the component (E) is a copolymer comprising a carboxylic acid comonomer. Claim 9 has been amended to recite a photopolymerizable crosslinking group. Claim 13 has been amended to recite that the layer, after photocuring, has a percentage change of 30% or less in the compressive elasticity between before and after dipping in a cosolvent comprising isopropyl alcohol and n-propyl acetate, as supported by the specification at, for example, page 21, line 24, through page 22, line 2.

New claim 26 has been added as supported by the specification at, for example, page 7, lines 14-23. New claim 27 has been added as supported by the specification and the originally filed claims.

No new matter has been added by way of these amendments.

Summary of the Office Action

Claims 1-25 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite.

Claims 1-5, 7, 8, 11-18, 20, 21, 24, and 25 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Tanaka et al. (U.S. Patent 6,197,479).

Claims 1, 2, 5-8, 13, 13-15, and 18-21 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Sasashita et al. (U.S. Patent 5,916,732) (hereinafter “Sasashita I”).

Claims 1-3, 5-7, 13-16, and 18-20 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Sasashita et al. (JP 2000-214594) (hereinafter “Sasashita II”).

Claims 1, 3-5, 9, 13, 14, 16-18, and 22 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over, Nakamori et al. (JP 10-148930).

Claims 1-25 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over, Obata et al. (JP 09-031337).

Claims 1-25 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or in the alternative under 35 U.S.C. § 103(a) as allegedly obvious over, Okazaki et al. (JP 2002-062639).

Claims 7, 8, 10-12, 20, 21, 23, and 24 (and presumably claim 25) are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Nakamori et al.

Reconsideration of the pending claims is hereby requested.

Discussion of the Indefiniteness Rejection

According to the Examiner, the phrase “fine particle state” is indefinite because it is not clear whether this phrase applies to the hydrophobic polymers before or after curing. As discussed above, claim 1 has been amended to recite “wherein each of said two or more hydrophobic polymers is present in a fine particle state in the *uncured* composition.” The particle measurements, however, can be conducted on the cured composition (as set forth in the patent application). The Rule 132 Declaration submitted herewith describes how scanning probe microscope (SPM) measurements of a fine particle state can be made after the resin is cured because the morphology of the fine particles is not affected by the curing process.

The component “(G) a conjugated diene oligomer having no crosslinking group” in claims 9, 10, 22, and 23 allegedly is indefinite because the specification does not clearly define what is meant by this term. Claim 9 has been amended to recite a photopolymerizable crosslinking group, which is understood based on the teachings in the specification.

The term “cosolvent” in claim 14 (Applicants believe the Examiner intended to refer to claim 13 rather than claim 14) allegedly is unclear. Claim 13 depends on claim 1, but claim 1 does not require a solvent. Therefore, the relative term “cosolvent” allegedly is ambiguous. Applicants have amended claim 13 to make it clear that the term “cosolvent” refers to a medium comprising two solvents, namely isopropyl alcohol and n-propyl acetate.

Claims 6 and 19 recite the phrase “carboxylic acid-based copolymer,” which the Examiner contends is indefinite. Claim 6 has been amended to recite “wherein the component (E) is a copolymer comprising a carboxylic acid comonomer.” The term “carboxylic acid-based copolymer” describes a copolymer that comprises as least one carboxylic acid comonomer as a starting material (e.g., an acrylate). As readily understood in the art, upon forming a polymer, the carboxylic acid moiety -C(O)OH is transformed into a different chemical linkage (e.g., -C(O)O-), and consequently, the resulting copolymer can no longer be technically termed a “carboxylic acid copolymer.” Thus, Applicants believe that the phrase “a copolymer comprising a carboxylic acid comonomer” correctly describes the type of copolymer product that is suitable for component (E).

In view of the foregoing, Applicants submit that each aspect of the indefiniteness rejection has been addressed. As a result, the indefiniteness rejection should be withdrawn.

Discussion of the Anticipation and Obviousness Rejections

For the reasons set out below, each of the cited references fails to disclose or suggest the present invention as defined by the pending claims. In particular, each of the cited references fails to disclose or suggest at least one element required by one or more of the pending claims. Therefore, the anticipation and obviousness rejections in view of each of these references should be withdrawn.

A. Tanaka et al.

Tanaka et al. allegedly discloses a polymer prepared from a latex rubber dispersion in water, in which the polymer has particle sizes with the required peak differences. See, e.g., Examples 1, 2, and 4.

Tanaka et al. essentially requires a synthetic rubber (solid), which is not used in the present invention.

Tanaka et al. describes the use of NBR3, which is a synthetic rubber component. In particular, NBR3 is a carboxylated nitrile rubber (col. 9, lines 27-31, of Tanaka et al.) that corresponds to component (C) of Tanaka et al. (col. 4, lines 32-40). However, as described in Tanaka et al., component (C) is added to improve the resistance to an aqueous ink (col. 4, line 37-40). In other words, the purpose of incorporating NBR3 is to impart *hydrophobicity*. As such, NBR3 cannot be considered to be “a hydrophilic polymer,” as recited in claims 3 and 4.

B. Sasashita I

Sasashita I allegedly discloses compositions comprising Nipol 1072, Laxter DM 801 (the hydrophobic polymers), an acrylate monomer (photoinitiator), a polyamide (hydrophilic polymer), and alcohol solvents (viscosity adjusting agent). See, e.g., Examples 8 and 9. The Examiner contends that the compositions of Sasashita I inherently have the claimed dispersion properties.

The rubber disclosed in Sasashita I is not a rubber component obtained from a water dispersion latex but rather is dispersed as microparticles at the stage of melt-blending the raw materials of the composition (col. 3, line 61, through col. 4, line 11). Since two raw material rubbers are *not* present in the particle state, the compositions disclosed in Sasashita I cannot possess a ratio of respective particle diameters of the hydrophobic polymers at the peaks of 2 times or more, which is a requirement of each of claims 1 and 3-27.

C. Sasashita II

Sasashita II allegedly discloses a composition comprising two different butadiene latex polymers, a hydrophilic polymer, phenoxy polyethylene glycol acrylate and glycerol

diglycidyl acrylate (photopolymerizable compounds), and a photoinitiator. See, e.g., paragraphs 0011-0023 of the English translation.

The invention of Sasashita II is directed to an adhesion-preventing layer comprised of layers (a) and (b) that is disposed on a photosensitive resin surface (paragraph 0001). More specifically, layer (a) is formed on a photosensitive resin layer and layer (b) is formed on layer (a) (paragraph 0012). Layer (a), which contains latex, is an intermediate layer for the purpose of improving adhesion between the photosensitive resin layer and layer (b). Layer (a) further prevents parts of layer (b) from peeling off the photosensitive resin layer (paragraph 0010). The adhesion prevention property is attributable to layer (b).

For the photosensitive resin layer, Sasashita II discloses that a hydrophilic polyamide and three kinds of synthetic rubbers (i.e., Nipol 1072, Nipol DN214, Nipol BR1220L), none of which is a latex, are melt-mixed, and then two kinds of latexes (i.e., LX111NF and DM811), a photopolymerizable compound, and a photopolymerization initiator are added thereto (paragraph 0048).

Applicants note that the three synthetic rubbers are solids and are not latexes, and thus do not qualify as “hydrophobic polymers obtained from at least two or more water dispersion latexes” (i.e., component (A)), as required by all of the pending claims.

While the two latexes (i.e., LX111NF and DM811) may qualify as “hydrophobic polymers obtained from at least two or more water dispersion latexes” (i.e., component (A)), Sasashita II does not describe that these latexes are each present in a fine particle state, that the particle diameter distribution of the fine particles has two or more peaks, and that the ratio of respective particle diameters at the peaks is 2 times or more. Moreover, there is no evidence that such characteristics are inherent to the two latexes. Therefore, without an actual disclosure of these features, Sasashita II cannot be said to anticipate or render obvious any of the pending claims.

D. Nakamori et al.

Nakamori et al. allegedly discloses a composition comprising two different hydrophobic polymers, a hydrophilic polymer, benzyl dimethyl ketal (photoinitiator), butadiene oligo acrylate (photopolymerizable compound), a conjugated diene oligomer

having no crosslinking group, and solvent (viscosity adjusting agent). See, e.g., Examples 1-3.

The examples of Nakamori et al. describe the use of “hydrophobic polymer 45 copies of chlorinated polyethylene (the DAISO rack H-135, DAISO Co., Ltd. make), styrene-butadiene rubber latex” (paragraph 0062). Applicants note that the hydrophobic polymer chlorinated polyethylene is not a latex. Therefore, the composition described by Nakamori et al. does not contain “hydrophobic polymers obtained from at least two or more water dispersion latexes,” as required by the pending claims. Moreover, there is no suggestion to utilize such a combination of hydrophobic polymers from at least two or more water dispersion latexes.

E. Obata et al.

Obata et al. allegedly discloses a plate prepared from two different hydrophobic resins that are dispersed in a hydrophilic polymer, in which the method of making forms a phase separation (i.e., “present in a fine particle state”). The Examiner contends that the formation of the plate is either the same as, or obvious in view of, the resin and plate defined by claims 1-25.

Obata et al. discloses a photosensitive resin composition comprised of a particulate dispersed phase and a continuous phase (paragraph 0008). The dispersed phase includes a hydrophobic polymer and a hydrophilic polymer. The continuous phase “consists of mainly different hydrophobic polymer from a cross linking agent and said hydrophobic polymer.” Thus, hydrophobic polymer is present in both the dispersed phase and the continuous phase, but only *one* hydrophobic polymer is present in the dispersed phase. This composition is distinctly different from the present invention as defined by the pending claims, which require *at least two* hydrophobic polymers in a fine particle state.

F. Okazaki et al.

Okazaki et al. allegedly discloses compositions that read on the claimed resins (paragraphs 0043-0045). The plates formed require the presence of two different hydrophobic resins dispersed in a hydrophilic polymer, in which the method of preparing the plate forms a phase separation thereby forming the required “present in a fine particle state.”


The Examiner contends that the formation of the plate is either the same as, or obvious in view of, the resin and plate defined by claims 1-25.

Okazaki et al. describes a photosensitive resin composition comprised of a particulate dispersed phase and a continuous phase, which results from a phase separation caused during the blending and mixing of various components (paragraph 0025). Okazaki et al. further describes that the particulate dispersed phase comprises a hydrophilic polymer or a water-swellaable elastomer (paragraph 0015). Thus, the particulate dispersed phase of Okazaki et al. does *not* comprise hydrophobic polymers obtained from at least two or more water dispersion latexes, in which the two or more hydrophobic polymers are each present in a fine particle state, as required by the pending claims.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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